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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LAMB, BRENDA A

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 01/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/675,183

Applicant(s)

BHATTACHARYA ET AL.

Examiner

Brenda A Lamb

Art Unit

1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claims 8-9, 22, 23 and 24-51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what the device for creating a mixture of an adhesive promoter and de-ionized water in claim 24 encompasses, that is, it is unclear whether or not one is claiming the device creates or generates/ reacts components to make the adhesive promoter and de-ionized water or rather one is claiming device is mixing the previously generated adhesive promoter and deionized water. The following terms lack proper antecedent basis: "said storage device" in claim 28; "said supply device" in claim 8; "said heat exchanger" in claim 22; and "said heat exchanger" in claim 23.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 24-27 and 37-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Cuellar.

Cuellar teaches the design of a coating apparatus comprised of a device for mixing thereby creating a mixture of the coating material (elements 90, 75); an enclosure 12 for providing a protected environment during application of coating to the substrate; an application device (element 24) for applying coating to the substrate; a pump for supplying the coating material to the application device (see column 7 lines 33-36); and an atmosphere controller, including doors 28, which regulate the atmosphere within the enclosure by substantially preventing introduction of air from outside into the chamber. Therefore, absent a clear recitation of how applicant's device for creating a mixture differs structurally from Cuellar's device for mixing or creating a mixture (elements 90, 75), Cuellar et al teaches every element set forth in claim 24. With respect to claim 37, Cuellar et al teaches a transport device, conveyor system 26, for passing substrates through the enclosure so the coating is delivered onto the substrates. With respect to claim 38, Cuellar et al teaches the application device comprises at least one nozzle. With respect to claim 39, Cuellar et al teaches that flow rate of coating to and through the nozzle can be regulated (see column 6 lines 24-28). With respect to claim 25-27, Cuellar et al teaches a storage device, element 30, for

receiving and storing a supply of coating. Cuellar et al teaches the recirculation system includes pump 74 which recirculates the mixture to the storage tank by withdrawal therefrom Cuellar et al teaches the mixture is recirculated through a filter 72.

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cuellar et al in view of Bartow.

Cuellar et al is applied for the reasons noted above. Cuellar et al fails to teach a heat exchanger for adjusting temperature of the mixture prior to application to the substrate. However, it would have been obvious to modify the Cuellar apparatus by arranging a heat exchanger to adjust temperature of the mixture prior to its application to the substrate since Bartow teaches arranging heat exchangers to maintain temperature and thereby viscosity of the coating prior to distributing coating to paint booth for application of coating onto the substrate for the obvious advantage of greater control of the coating process as a result of greater control of coating viscosity.

Claims 44-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cuellar et al in view of Johnson 3,559,619.

Cuellar et al is applied for the reasons noted above. Cuellar et al fails to teach a heat exchanger for adjusting temperature of the mixture prior to application to the substrate. However, it would have been obvious to modify the Cuellar apparatus by arranging a heat exchanger to adjust temperature of the mixture prior to its application to the substrate since Johnson teaches arranging heat exchangers along with an upstream filter to maintain temperature and thereby viscosity of the coating prior to distributing coating to application for application of coating onto the substrate for the

obvious advantage of greater control of the coating viscosity. Further with respect to claims 46-47 Johnson teaches at column 3 lines 38-49 that water is supplied via pump 40 to the heat exchanger to control temperature thereby viscosity of the coating to the applicator. Johnson teaches that the supplied water is hot but obvious to use chilled water dependent on desired coating temperature/viscosity. Therefore, it would have been obvious given the modifications of the Cuellar et al apparatus as discussed above with Johnson heat exchanger to supply hot or chilled water from respectively a boiler or chiller dependent on desired degree of viscosity of the coating material applied.

Claims 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cuellar et al in view of Bradshaw.

Cuellar et al fails to teach a chiller to supply chilled water or a boiler to supply heated water to the atmosphere controller. However, Bradshaw teaches a system for adjusting air temperature/ humidity supplied to a paint spray booth using warmed or chilled water which is supplied to a heat exchanger which is part of an atmosphere controller for a paint spray booth (see column 10 lines 9-65). Therefore, it would have been obvious to modify the Cuellar et al apparatus by providing an additional means for controlling atmosphere of the paint spray booth such as one taught by Bradshaw using warmed or chilled water which is supplied to a heat exchanger which is part of an atmosphere controller for a paint enclosure for the obvious advantage of greater control of the coating process.

Claims 1, 3-11, 14, 17, 20, 24-26, 28-30, 33, 34, 37-44 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al in view Ogisu et al.

Kato et al teaches an enclosed system for improving adhesion between thermoplastic elements and surface coating comprising the following elements: an adhesion promoter, ozone, mixed with an aqueous solution or an aqueous ozone solution; a storage device 19 for receiving and storing a supply of the above cited mixture; an enclosure for providing a protected environment for applying the mixture to thermoplastic elements; cleaning device 11 for removing contaminants from thermoplastic elements prior to applying the mixture; an adhesion promoter application device positioned within the enclosure for applying the mixture to thermoplastic elements; a pump for supplying the mixture to the application device; and atmosphere controller, heater 21, which obviously indirectly regulates temperature within the enclosure; drying device 29 for drying the mixture after applying the mixture to thermoplastic elements; and transport device 9 for transporting thermoplastic elements through the system. Kato et al fails to teach a mixing device for mixing or a device for creating a mixture of an adhesion promoter, ozone, and water to form a mixture. However, it would have obvious to modify the Kato et al system which applies a mixture, aqueous ozone solution, to include a mixing device such as taught by Ogisu et al since Ogisu et al teaches creating the aqueous ozone solution by mixing ozone and water using a mixing device to enable one to dissolve the ozone gas in the water (see Ogisu et al at column 17 lines 16-27). Thus claims 1 and 24, 29, 33 and 37 over obvious over the above cited references. With respect to claims 3 and 38, Kato et al teaches the application device includes at least one nozzle (elements 111-115 and 121-125). With respect to claims 5-6, 25, 40 and 42, Kato et al shows in Figures 3 and 5 a supply

conduit or supply device, not numbered, mounted so as to be integral with the at least one nozzle for supplying the distinct lines of nozzles and the supply device is located in the enclosure. The functional recitation in claims 4, 7, 39 and 43 that the flow rate of the mixture through the nozzle is regulated has not been given patentable weight because it is narrative in form. In order to be given patentable weight, a functional recitation must be expressed as a "means" for performing the specified function, as set forth in 35 USC 112, sixth paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the presence of the functional recitation. In re Fuller, 1929 C.D. 172; 388 O.G. 279 With respect to claims 10 and 44, Kato et al teaches a heat exchanger 21 for adjusting the temperature of the mixture prior to its application to the thermoplastic elements. With respect to claims 26 and 11, Kato et al teaches the system includes a re-circulation pump 20 for re-circulating the mixture through the storage device. With respect to claims 14 and 30, Kato et al shows the enclosure also houses the cleaning device and the cleaning devices is arranged prior to the application device with respect to the path of travel of the thermoplastic elements. With respect to claims 17 and 34, Kato et al shows that the drying device 29 is connected to the enclosure for providing the protected environment to apply the mixture to the thermoplastic elements via conveyor 9 which transports the thermoplastic elements from the above cited enclosure to the drying device 29. With respect to claims 28, 41 and 8-9, Kato et al fails to teach to teach a tank for receiving an amount of a mixture from storage device 19 and transferring at least a portion thereof to the supply device for the applicator via gravity. However, Ogisu et al shows in his Figures

transferring via gravity from a tank to the applicator. Therefore, it would have been obvious given the modifications of the Kato et al as discussed above to provide a tank to receive an amount of a mixture from storage device 19 and transfer at least a portion thereof to the supply device for the applicator via gravity since Ogisu et al teaches transferring via gravity from a tank to the applicator via gravity for the obvious advantage of simplicity of using gravity as motive force for transferring fluid and for obvious advantage of providing an additional storage between the storage device and application device – extra supply of fluid for fluctuations in demand. With respect to claims 20 and 48, Kato et al teaches a mixing device which includes valve 28 for regulating the mixture of the adhesion promoter with water.

Claims 12-13, 27 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al in view of Ogisu et al and Mashima.

Kato et al and Ogisu et al is applied for the reasons noted above but fails to teach the mixture is re-circulated through the filter. However, it would be obvious given the modifications of the Kato et al as discussed above to arrange a filter at position within the scope of claims 12-13, 27 and 45 since Mashima teaches arranging a filter within a re-circulation path of object treating process for obvious reason to remove contaminants from coating.

Claims 15-16, 18-19, 31-32 and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al in view of Ogisu et al and Ankrett.

Kato et al and Ogisu et al is applied for the reasons noted above but each fails to teach the use of a partial seal between the cited sections of the enclosure set forth in

claims 15, 16, 18, 19, 31, 32 and 35-36. Ankrett teaches providing a partial air seal in association with the treatment chamber. However, it would be obvious given the modifications of the Kato et al as discussed above to arrange a partial seal such as taught by Ankrett between the cited sections of the enclosure set forth in claims 15, 16, 18, 19, 31, 32 and 35-36 for the obvious reason to minimize cross-contamination between chambers.

Claims 22, 23, 46, 47, and 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al in view of Ogisu et al and Bradshaw.

Kato et al and Ogisu et al is applied for the reasons noted above but each fails to teach the system includes a chiller for supplying chilled water to the atmosphere controller and the heat exchanger and a boiler for supplying heated water to the atmosphere controller and the heat exchanger. Bradshaw teaches a system for treating objects includes an enclosure for treating objects therein. Bradshaw teaches supplying to the heat exchanger chilled brine or water, obviously from a chiller to chill the water, and heated brine or water, obviously from a boiler to heat the water. Therefore, it would have been obvious given the modifications of the Kato et al to provide an atmosphere controller which includes a such as taught by Bradshaw which is separate from the heat exchanger 21 for the taught advantage of enabling one to heat or cool the treatment enclosure regardless of the temperature of the outside weather. Further, it would have been obvious given the modified Kato et al system with the chiller and boiler to supply the chilled water and heated water also to Kato et al heat exchanger 21 since Bradshaw teaches his heat exchanger includes a source for chilled water and

heated water for the taught advantage of precise temperature control of the medium flowing through the heat exchanger.

Claims 21 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al in view of Ogisu et al and Browning.

Kato et al and Ogisu et al is applied for the reasons noted above but each fails to teach the system includes a surface tension meter is adapted to analyze a wet sample of the mixture. However, Browning teaches the surface tension of the coating composition is controlled by controlling the viscosity of the coating composition (at column 7 lines 31-34). Therefore, it would have been obvious given the modification of the Kato et al as discussed above to control surface tension using a viscosity controller such as taught by Browning and provide communication of the Browning viscosity controller which meters or controls viscosity with the metering device or Kato et al valve for providing regulation of the amount of adhesion promoter added to the water which is based on the analysis. Note the above references fail to explicitly state that the water is de-ionized but obvious to do so by reducing contamination of the adhesion promoter-water mixture by utilizing de-ionized water.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al in view of Ogisu et al and Kawano et al 6,262,160.

Kato et al and Ogisu et al are applied for the reasons noted above. Kato et al fails to teach the adhesion promoter has a composition, which is within the scope of claim. However, it would have been obvious given the modification of the Kato et al system as discussed to use an adhesion promoter such as taught by Kawano et al for

the taught advantage of the Kawano et al adhesion promoter – improved adhesion of coating to the substrate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brenda Lamb whose telephone number is (571) 272-1231. The examiner can normally be reached on Monday and Wednesday thru Friday with alternate Tuesdays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lamb/LR
January 10, 2005


BRENDA A. LAMB
PRIMARY EXAMINER